

Claims

1. A method for managing channels within an audio conferencing system

comprising:

receiving a call on a channel, the call associated with a conference;

identifying a resource having a predetermined capacity to receive additional conferences, the resource having a plurality of channels and operating under control of a processor to handle audio conferences; and

adding the channel to the conference if the resource has a capacity to add the channel, and moving a channel associated with a second conference to a second resource if the resource does not have the capacity to add the channel.

*within a single unit resource  
by a hrs connected between 1st & second resource.*

2. The method of claim 1 further comprising linking a plurality of resources to provide a conference that is distributed among the plurality of resources.

3. The method of claim 1 wherein the first resource is a digital signal processor and the second resource is a digital signal processor.

4. The method of claim 1 wherein the predetermined capacity to receive additional conferences is determined using a spacing parameter, the spacing parameter indicative of a capacity for growth of conferences on a resource.

5. The method of claim 1 wherein moving a channel includes moving the channel in a manner that is inaudible to a human listener.

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6. The method of claim 1 further comprising reallocating conferences among a plurality of resources at predetermined times.

7. The method of claim 6 wherein predetermined times include at least one of fixed intervals, the beginning of a new conference, or the end of an existing conference.

8. An audio conferencing system comprising:  
a plurality of network interface cards connected by a first bus to a host and connected by a second bus to a plurality of digital signal processing units, and further connected to one or more telecommunications lines, each digital signal processing unit comprising a plurality of digital signal processing units configured to manage channels in one or more audio conferences associated with one or more of the telecommunications lines, and each digital signal processing unit including a processor connected in a communicating relationship with the host and connected in a communicating relationship with the digital signal processing resources of the digital signal processing unit, each digital signal processing unit further including a memory, the memory storing state information relating to one or more audio conferences and the memory connected in a communicating relationship with the host, and each digital signal processing unit further including a switch for selectively coupling the digital signal processing resources of the digital signal processing unit to the second bus, the host accessing the processor, memory, and switch of one or more of the digital signal processing units to dynamically assign digital signal processing resources to one or more conferences present within the

audio conferencing system.

9. The system of claim 8 wherein the first bus includes a time-slot interchange bus.

Sub 10. A method for managing conferences within an audio conferencing system, the  
B2 method comprising:

identifying a first resource with a predetermined capacity to receive additional conferences, the first resource having a plurality of channels and operating under control of a processor to handle audio conferences;

identifying a second resource with a predetermined capacity to receive additional conferences, the second resource having a plurality of channels and operating under control of a processor to handle audio conferences, the capacity of the second resource being less than the capacity of the first resource, and the second resource including a conference; and

moving the conference on the second resource to the first resource if the first resource has a capacity to include the conference, and attempting to identify a third resource if the first resource does not have the capacity to include the conference.

11. The method of claim 10 further comprising repeating identifying a first resource, identifying a second resource, and conditionally moving the conference at predetermined times to balance a distribution of conferences among a plurality of resources.

Sub 12. A method for sharing data among a plurality of audio conferencing resources  
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comprising:

establishing a link line from a first audio conferencing resource to a second audio conferencing resource; and  
transmitting data from the first audio conferencing resource to the second audio conferencing resource.

13. The method of claim 12 wherein the data includes talk levels for one or more lines participating in a conference.

14. The method of claim 12 wherein the link line is formed using a time-slot interchange bus.

15. The method of claim 12 further comprising transmitting data from the second audio conferencing resource to the first audio conferencing resource.

16. The method of claim 15 further comprising establishing a plurality of bi-directional links among a plurality of audio conferencing resources.

17. The method of claim 12 wherein the data includes state data for one or more for one or more lines or conferencing resources.

18. A method for moving a line within an audio conference comprising:  
determining a switch delay indicative of a delay for switching a line from a source

resource to a target resource;

buffering audio data for a line from the source resource at the target resource for an amount of time at least as great as the switch delay, the audio data including talk data for the line;

transferring conference data for the line from the source resource to the target resource, the conference data including state data for the line;

switching the line from the source resource to the target resource; and

using the buffered audio data to maintain audio continuity while switching the line.

19. A method for managing audio conferencing resources comprising:

detecting a loss of a first physical resource, the first physical resource being a resource for conducting an audio conference;

identifying one or more audio conferences associated with the physical resource;

identifying a second physical resource, the second physical resource being a resource for conducting an audio conference, and the second physical resource having a capacity for the one or more conferences; and

allocating the one or more conferences to the second physical resources.

20. The method of claim 19 wherein the loss of a first physical resource is due to at least one of a power failure or a component failure.

21. The method of claim 19 wherein the loss of a first physical resource is due to an

intentional removal of a resource.

22. The method of claim 19 further comprising repeating the steps of detecting a loss of a first physical resource, identifying one or more audio conferences associated with the physical resource, identifying a second physical resource and allocating the one or more conferences to the second physical resources continuously.

23. A method for managing audio conferencing resources comprising:  
 detecting a loss of a first physical resource, the first physical resource being a resource for conducting an audio conference;  
 identifying one or more lines of an audio conference associated with the physical resource;  
 identifying a second physical resource, the second physical resource being a resource for conducting an audio conference, and the second physical resource having a capacity for the one or more; and  
 allocating the one or more lines to the second physical resources.

24. A system for allocating resources in an audio conference comprising:  
 a time-slot interchange bus;  
 a plurality of network interface cards connected in a communicating relationship with the bus, each network interface card coupling one or more lines to the bus using fixed time slots; and  
 a plurality of digital signal processing boards, each digital signal processing board

including a switch, the switch operable under control of a host to couple with one or more predetermined time slots of the bus, and each digital signal processing board including a plurality of digital signal processing resources connected in a communicating relationship with a local time-slot interchange bus, the local bus transmitting data among the digital signal processing resources and the switch;

whereby any one of the one or more lines can communicate with any one of the digital signal processing resources without changing a time slot associated with the line on the time-slot interchange bus.

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